

SEMIPACK® 3

Thyristor / Diode Modules

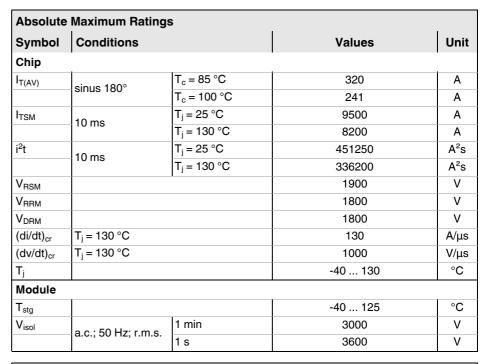
SKKH 323/18 E

Features*

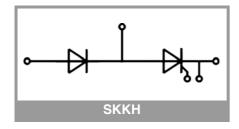
- · Industrial standard package
- · Electrically insulated base plate
- Heat transfer through aluminum oxide ceramic insulated metal base plate
- Chip soldered on direct copper bonded Al₂O₃ ceramic
- UL recognition, file no. E63532

Typical Applications

- DC motor control (e. g. for machine tools)
- Temperature control (e. g. for ovens, chemical processes)
- Professional light dimming (studios, theaters)



Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Chip	•					
V _T	$T_j = 25 ^{\circ}\text{C}, I_T = 750 \text{A}$				1.45	V
$V_{T(TO)}$	T _j = 130 °C				0.81	V
r _T	T _j = 130 °C				0.85	mΩ
I _{DD} ;I _{RD}	$T_j = 130$ °C, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$				100	mA
t _{gd}	$T_j = 25 ^{\circ}\text{C}, I_G = 1 \text{A}, di_G/dt = 1 \text{A}/\mu \text{s}$			1		μs
t _{gr}	$V_{D} = 0.67 * V_{DRM}$			2		μs
tq	T _j = 130 °C		150		μs	
I _H	T _j = 25 °C			150	500	mA
IL	$T_j = 25 ^{\circ}\text{C}, R_G = 33 \Omega$			300	2000	mA
V_{GT}	$T_j = 25$ °C, d.c.		2			V
I _{GT}	$T_j = 25$ °C, d.c.		150			mA
V_{GD}	T _j = 130 °C, d.c.				0.25	V
I_{GD}	T _j = 130 °C, d.c.				10	mA
R _{th(j-c)}	cont.	per chip			0.091	K/W
		per module			0.0455	K/W
R _{th(j-c)}	sin. 180°	per chip			0.095	K/W
		per module			0.048	K/W
R _{th(j-c)}	rec. 120°	per chip			0.11	K/W
		per module			0.055	K/W
Module		·				
$R_{th(c-s)}$	chip			0.08		K/W
	module			0.04		K/W
Ms	to heatsink M5		4.25		5.75	Nm
M _t	to terminals M8		7.65		10.35	Nm
а					5 * 9.81	m/s ²
W				410		g



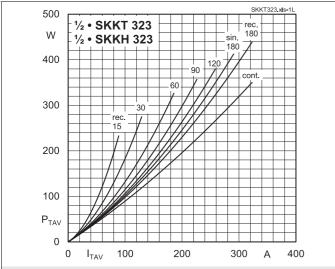


Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

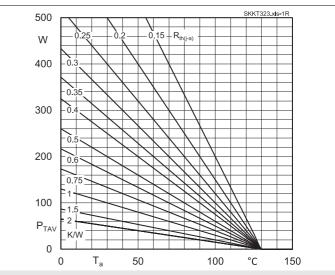


Fig. 1R: Power dissipation per thyristor/diode vs. ambient temperature

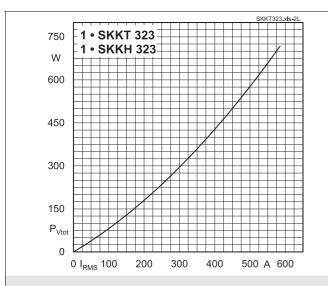


Fig. 2L: Power dissipation of one module vs. rms current

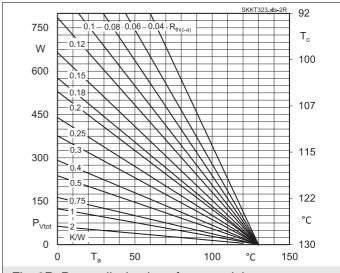


Fig. 2R: Power dissipation of one module vs. case temperature

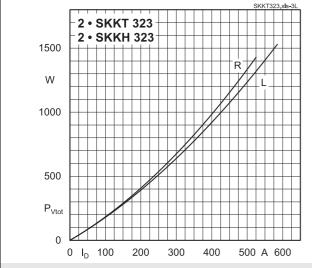


Fig. 3L: Power dissipation of two modules vs. direct current

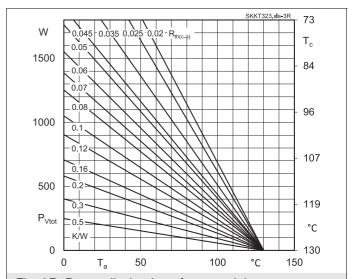


Fig. 3R: Power dissipation of two modules vs. case temperature

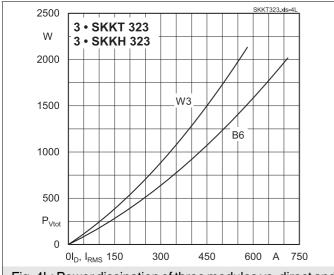


Fig. 4L: Power dissipation of three modules vs. direct and rms current

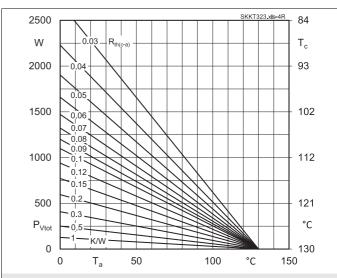


Fig. 4R: Power dissipation of three modules vs. case temperature

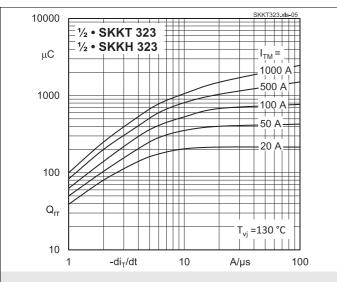


Fig. 5: Recovered charge vs. current decrease

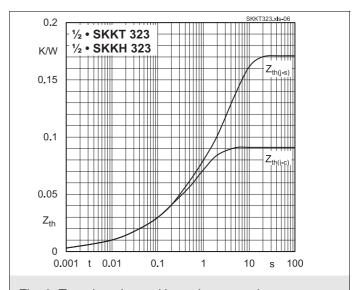


Fig. 6: Transient thermal impedance vs. time

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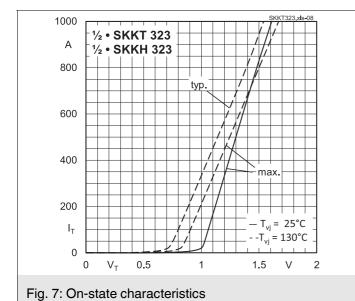
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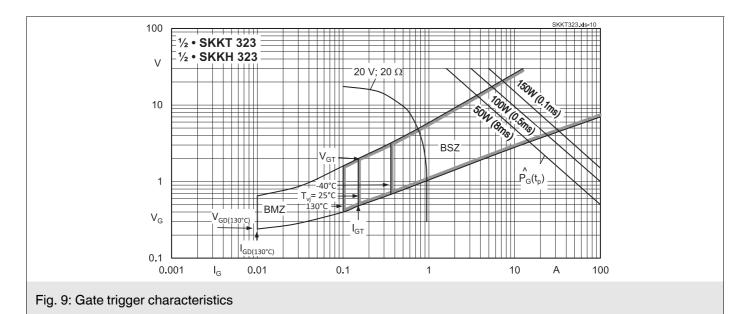
2

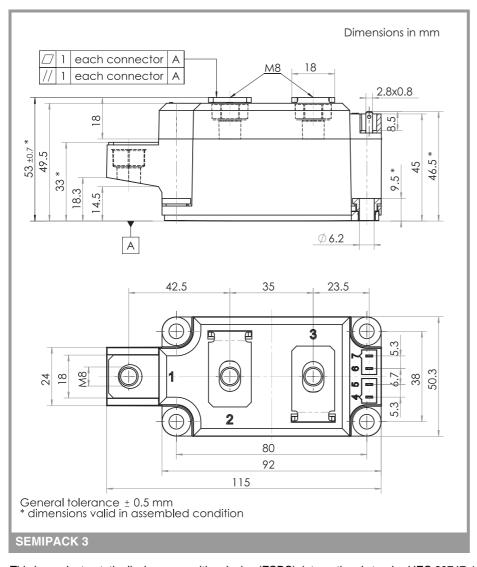
 $I_{T(OV)}$

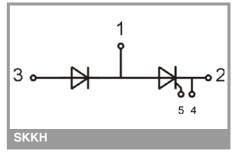
 I_{TSM}

1.6









This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

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